

with a species of large parasite of the family of the *Ornithomyiæ*, of a dirty green colour. We were never able to study the propagation of this bird ; but while in Mayotte we saw an individual make a nest of rushes in the hole of a great 'Badamier' (*Terminalia cappa*). These birds when they cry puff out the throat so that this portion of the body has the appearance of a pendent bag. When wounded they erect the feathers of the forehead and ears as well as those of the throat, all the while distributing well-aimed blows with the beak. The Cyrombo plays a great part in the chants and religious recitations of the Malagash natives. The French colonists of Mayotte call this bird the 'Parrot.' It is common at Madagascar and Mayotte, and has, according to Mr. Sclater, been found in the island of Anjouan."

XXIII.—On the Ornithology of Algeria.

By J. H. GURNEY, Jun., F.Z.S.

[Concluded from page 86.]

79. MELANOCORYPHA CALANDRA (Linn.). Calandra Lark.

Occurs in large flocks up to the middle of March. This species is very common at Ain-Oussera and Bougzoul ; but I never met with any among the Larks in the Algiers market. It is quite unknown in the Mزاب. The underside of the wing, which in the Crested Lark is pink, is black in the Calandra ; and this, joined to its large size, renders it conspicuous wherever it is found.

80. CALANDRELLA BRACHYDACTYLA (Leisl.). Short-toed Lark.

Once seen at Laghouat.

81. CALANDRELLA REBOUDIA, Loche. Reboud's Lark.

Common in flocks about Ain-Oussera.

82. AMMOMANES LUSITANICA (Gmel.): *A. isabellina* (Temm.). Desert-Lark.

At Laghouat and thence as far as Gardaia this inconspicuous bird was met with on bare stony plains, where one would only expect to find Chats, and less commonly on hill-sides. Its

habits certainly resemble those of the Chats, except that it perches less on stones, and runs much more; and in particular it bears no resemblance to the genera *Calandrella*, *Alauda*, and *Galerida*, with which it is usually associated. Its flight is far from swift, and often very undulating; as it descends, after poising itself a few moments in the air, its quivering wings bend slightly forwards, and its body seems to sink; but these manœuvres are doubtless confined to the spring. It has a pleasing song, although its notes are weak. Length $5\frac{1}{2}$ to $6\frac{1}{2}$ inches; expanse 12 inches. Food small black and yellow seeds and flies.

83. *AMMOMANES REGULUS*, Bp.

I only shot one specimen of this species, in the Mزاب. It comes exceedingly close to *A. pallida* (Cab.); but I am confirmed in referring it to this species by Dr. Tristram.

84. *OTOCORYS BILOPHA* (Temm.). Desert Horned Lark.

This was in some respects the most interesting bird which I met with in the course of my rambles; and I regret that I was prevented from bringing home a specimen. It was only met with at Tilremt, halfway between Laghouat and Gardaia.

85. *GALERIDA CRISTATA* (L.). Crested Lark.

Having, at my father's suggestion, compared Crested Larks from Algiers and Blida with Spanish examples in Mr. Saunders's collection, and others from different parts of Europe, the Algerian bird is found to have darker plumage, a smaller crest, a smaller and differently shaped bill, and a more rufous rump. The black of the tail is also much stronger and deeper.

86. *GALERIDA ABYSSINICA*, Bp. Abyssinian Crested Lark.

Found in the Sahara, and identified for me by Dr. Tristram.

87. *GALERIDA MACRORHYNCHA*, Tristr.: *Megalophonus randoni*, Loche. Long-billed Crested Lark.

I first remarked this species at Ain-Oussera (where Capt. Loche obtained it) on the 12th of March, at which time they were paired. It seems to be confined, like the Calandra, to level plains, whereas *Galerida abyssinica* is found in the hills. They walk with the crest up; and when one has been on the ground,

I have observed it often look upwards at its mate in the sky, singing as it mounted. Of those I shot, one had been feeding upon caterpillars an inch in length; the gizzard of another glittered with the bright wings of small beetles. There appears to be a sexual difference not hitherto noticed, viz. that the female is smaller than the male, and much darker.

88. *ALAUDA ARVENSIS* (Linn.). Skylark.

Common. Mr. Salvin, however, mentions that it is rare in the Salt-lake country. (Ibis, i. p. 314.)

89. *CERTHILAUDA DESERTORUM* (Stanley). Bifasciated Lark.
A little south of Laghouat.

90. *EMBERIZA MILIARIA*, Linn. Common Bunting.
Common.

91. *EMBERIZA CIRLUS*, Linn. Cirl Bunting.
Not uncommon.

92. *EMBERIZA CIA*, Linn. Meadow-Bunting.

Seen amongst the hills in the small valleys formed by every stream of water (oftenest near a road); not actually in flocks, but several in the same valley.

93. *FRINGILLARIA SAHARÆ*, Bp. House-Bunting.

I think every house in Gardaia is tenanted by a pair of House-Buntings. They are equally common in the other Mزاب cities. A nest in the inner court at Berriyan was upon some plaster in a large square hole. It contained one young one, yellow about the gape, and covered with a whitish down. It was a shallow nest, made of the thin twigs of firewood, and lined with hair. The hen generally flew to it from the edge of the opposite wall. I often watched her preening herself. She liked to sit on the edge of something, and let her tail hang down, which, from constant contact with the floor, was very dirty. She usually began by puffing out every feather until she resembled a ball divided by a deep line down the middle of the breast, into which she thrust her beak. When the lower parts were finished, she would preen the back, especially underneath the wing, between the scapular feathers. This is probably the attitude in which

they sleep. Scratching her head with her foot, or scraping her bill against the mortar, concluded her toilet, which occupied from three to five minutes. As I afterwards found other nests, I was able to make further observations. I think the eggs must be deposited in March, as in most instances the young had been hatched off. Judging from the one at Berr̄yan, which had flown when I returned to that place on the last day of the month, the young remain in the nest at least twenty-one days. On the 23rd of April I saw a nestling full-grown and able to feed itself, which must have been hatched about the 1st. The eggs are rather like Sparrows' eggs, but rounder. I only got three; Dr. Tristram did not get any; and there are none in the Museum at Algiers. The nest is generally, but not always, placed in a hole, and is composed of twigs or little sticks, and lined with hair, with sometimes the addition of wool or a bit of cotton. On one occasion two were found together, which probably belonged to the same bird, as one of them was unfinished. The young are less noisy than Sparrows. The female brings them food about every ten minutes; and they never chirp except when they see her. I never could detect any thing in her beak, or see on what she fed them, although I watched the operation often; so I do not doubt that she reproduces what she has eaten for the benefit of her callow offspring. Until the young leave the nest the male takes no share in feeding them. The female bears away the fæces. The males sing much the loudest; indeed the females never do more than twitter; but the cock pours forth a lively strain during the season of incubation. They are as tame as Robins. Frequently one would hop upon our carpet, to search for fragments of *couscous*, scrutinizing us within a few feet with his dark brown trustful eye. They are nearly omnivorous. I caught one in a trap baited with grain, and saw another nibbling green carrot-leaf; and once the female, at Berr̄yan, made her appearance with a large fly, which was not swallowed without a great effort and after much mastication. They used to drink out of our goatskin, fluttering and clinging to the wall for the moisture which had oozed through. Half circles of accumulated droppings under the rafters showed where they roosted. For a few seconds before settling down for the

night I used to see them hovering perpendicularly, with quivering wings and tail brought forward; and this was the only time at which there was any thing characteristic about their flight.

94. *PASSER DOMESTICUS* (Linn.). Sparrow.

Neither Dr. Tristram nor Mr. Salvin mentions the Common Sparrow; but I found it abundant in the Mزاب, at Laghouat, and also in the Tell. I cannot say that I ever saw the Cisalpine, though I examined a great many Sparrows with my telescope and in the market at the Place de Chatres in Algiers.

95. *PASSER SALICICOLA*, Vieill. Spanish Sparrow.

I shot ten near Blida.

96. *FRINGILLA SPODIOGENA*, Bp. Algerian Chaffinch.

Common.

97. *LINOTA CANNABINA* (Linn.). Common Linnet.

Common.

98. *SERINUS HORTULORUM*, Koch. Serin.

I found the Serin much less common at Blida than at Algiers, where some were seen consorting with Linnets, or singing from the bough of a fir tree, in a low, clear, continuous strain. In winter the notes of two together are like the twittering of a flock of Linnets. Their song being by no means loud, they are much kept as cage-birds.

99. *CARDUELIS ELEGANS* (Steph.). Goldfinch.

The Goldfinch is quite the commonest bird in many parts of the Tell; it abounds wherever there are thistles. I found a very formidable species of tick on some which I shot at Blida.

100. *COCCOTHAUSTES VULGARIS*, Steph. Hawfinch.

At Oued el Alleg and Miliana.

101. *CHLOROSPIZA AURANTIIVENTRIS* (Cab.). Algerian Greenfinch.

I think that though the extremes of *C. chloris* and *C. aurantiiventris* may be widely different, they run into each other so much that it is impossible to draw the line, and that the latter name will have to sink into a synonym. At Miliana, where they

were plentiful and quite tame (often entering within the walls of the town), there were always some dull-coloured individuals in a flock, far duller than many British ones which I have seen.

102. *CARPODACUS GITHAGINEUS* (Temm.). Vinous Grosbeak.

The favourite resorts of this Grosbeak are gravelly steppes, quite destitute of trees, or rocky ground at the base of the hills where nothing grows except the coarsest grass. In such places its trumpet note may be listened for and generally heard; and the author of the strange cadence be seen running like a *Calendrella reboudia* upon the ground—seldom singly, for the Vinous Grosbeak is gregarious long after it has paired. Seated on the edge of a boulder, I have seen them (in April) apparently feeding one another. They eat the heads of a small green plant and grass-seeds.

The bill is splendid coral-red; and the hairs at the base of the bill are red also in good male specimens.

103. *STURNUS VULGARIS*, Linn. Starling.

Winter visitant.

104. *PICA MAURITANICA*, Malh. Algerian Magpie.

Tilremt and Medea. I was several times shown Algerian Jays (*Garrulus atricapillus*) in cages. With regard to *Garrulus minor* (Loche, Cat. p. 52; *id.* Expl. Sc. v. p. 122), it would appear, judging from the type specimen in the Algiers Museum, to be only a small variety of the Common Jay. No second specimen appears to have been obtained; but there is an egg in the Museum.

105. *CORVUS CORAX*, Linn. Raven.

Breeding in society at Tilremt.

106. *PICUS MINOR*, Linn. Lesser Spotted Woodpecker.

Wood of Oued el Alleg.

107. *JUNX TORQUILLA*, Linn. Wryneck.

At Bouffarik and, I believe, also at Tilremt.

108. *CUCULUS CANORUS*, Linn. Cuckoo.

A summer visitant, but less common than in England.

109. *COLUMBA PALUMBUS*, Linn. Ring-Dove.

Algiers.

110. COLUMBA LIVIA, Linn. Rock-Dove.

Common in the Mزاب, and very easy to shoot, and not nearly so difficult to skin as some Pigeons. I almost invariably observed them in pairs on the rocks close to the gardens, but not actually in the Palm trees, where all the Doves were. I observed some dark-coloured varieties among these Cliff-pigeons at Boghari, doubtless caused by domestic ones which had wandered away to breed with them. One specimen was shot which, in the colour of the lower part of the back, approximated to *Columba schimperi*. It was probably the variety which is included in the 'Exploration Sc. d'Algerie,' ii. p. 111, under the title of *Columba turricola* (Bonap.).

111. TURTUR AURITUS. Turtledove.

I found this Dove associating with the next species, but not so numerous; perhaps it was only on passage.

112. TURTUR ÆGYPTIACUS (Temminck). Egyptian Turtledove.

The Egyptian Turtledove swarmed in the Palm-gardens at Gardaia. Six were sometimes in the crest of one Palm. There were many also in the town, upon the flat roofs of the houses. They have a stiff-necked appearance, from never looking in any direction but downwards. Perhaps from constantly sitting in the underpart of the crest of the Palm they have acquired a habit of always pointing their bills to the earth. They generally sit as close to the stem as possible. They did not appear to me to be in pairs. The natives do not molest them, although they eat their corn—not because Pigeons are sacred, as in some countries (Russia, for instance), but because they do not think them worth powder and shot. When their crops have become distended with food, their flight is slightly heavy; yet it always is graceful; and when high in air, it is as rapid, direct, and powerful as that of the most migratory of its congeners. In merely passing from one house to another, it gathers impetus to ascend two or three feet after its wings have ceased to move (which is always before alighting). This Turtledove coos but little, and not loudly, swelling out the feathers of the breast in the usual way. The iris consists of two circles—one brown, the other speckled grey.

113. *PTEROCLES ARENARIUS* (Pall.). Sand-Grouse.

The north of the Sahara*.

114. *CACCABIS PETROSA* (Gmel.). Barbary Partridge.

A friend of mine and two companions killed upwards of 70 brace of this Partridge in one day in Oran. The bird seems never to be found in the plains, and is almost unknown in the Sahara, where I only saw one pair; and Dr. Tristram also met with one covey in the Wed N'ça. They pair in February, and feed on the green leaves of plants. The cock weighs nearly $1\frac{1}{4}$ lb.; the hen does not weigh quite 1 lb.; she has, besides, no knob on the inner side of the tarsus, and the scapulars are much fewer, and the legs a much paler red than in the cock. The eyelids are orange.

115. *COTURNIX COMMUNIS*, Bonn. Quail.

Quails would be more plentiful in Algeria if they were not so much sought after. *La chasse* is opened from the 20th of March to the 15th of April, principally for their benefit; and no doubt great numbers are annually killed. I generally found them paired—which surprised me, as they were migrating.

116. *TURNIX SYLVATICA* (Desf.). Andalusian Quail.

* At the Algiers market.

117. *HOUBARA UNDULATA* (Bp.). Houbara Bustard.

The Arabs trapped me several Houbaras, and once a young Gazelle. The traps are placed among plants called "*Calpha*." The specimens thus obtained varied in weight from $2\frac{1}{2}$ lbs. to upwards of $3\frac{1}{2}$ lbs. The roots of the feathers are a bright pink, as in some specimens of *Otis tarda*, but I failed to find any trace of the pouch which exists in some males of that species. I brought six eggs home, four of which are now in Prof. Newton's collection. It may be worth mentioning that the English, French, and Arab names for this Bustard are nearly the same. Mr. Drake mentions that "*Hobar*" is the name for *Otis arabs* in Morocco (Ibis, 1869, 150); and by the natives of India it is given to *Otis macqueenii*, as I learn from Mr. Marshall.

118. *OTIS TETRAX*, Linn. Little Bustard.

French name, *Poule de Carthage*.

* The term "*Perdrix anglaise*" is applied (very erroneously) by French colonists to the Pin-tailed Sand-Grouse (*P. setarius*).

These Bustards fly slowly, with outstretched necks and wings bent upwards, very unlike the last species.

119. *GRUS CINEREA*, Bechst. Crane.

One evening at Bougzoul, as I was driving with the master of the caravanseraï, we saw eight Cranes marching abreast across the plain in the grey twilight. We guided the cart nearly to within gunshot, when they all ran together, with their heads up, and, without uttering any call, slowly sailed away, to seek safer quarters in the adjoining marsh.

120. *ARDEA BUBULCUS*, Sav. Buff-backed Heron.

Only one was observed in the Sahara; but at Oued el Alleg upwards of forty were feeding among the cattle. It being February, none of them had buff backs, and at a distance they might have been taken for tame Pigeons. The cows seemed to regard them as the crocodiles of Egypt are said to regard *Charadrius melanocephalus*, of which latter species, by the by, I saw a specimen at Boghari said to have been killed in Algeria.

121. *CICONIA ALBA*, Bechst. White Stork.

As early as the 15th of February I noticed a Stork feeding in a marsh at Oued el Alleg (river of leeches), and got within 50 yards. It stooped as it walked, but now and then held its head up boldly. When it flew it stretched its head and neck out to their fullest extent. I was informed that this was the day on which they usually returned to Medea, where a pair were repairing a nest on one of two chimneys at the gable end of a house on the 1st of the following month. The nest was small, and so much exposed to the wind that a mass of sticks had fallen on to the lower roof of an adjoining house; but the instinct of the Storks did not lead them to use this material again. The Stork leaves its nest with a spring, getting quite clear before it ventures to expand its huge wings. It does not draw in its legs, which are so long that they exceed the tail by nearly 12 inches. Its feet appear to touch when it is flying; but when it is just about to alight they are parted widely. Both sexes clap the bill, but never without first throwing back the head.

122. *PHŒNICOPTERUS ANTIQUORUM*, Temm. *Phœnicopterus roseus*, Pall. Flamingo.

At Bougzoul an Arab brought me an adult female Flamingo which had only just been killed. The beak would not open to more than $1\frac{1}{2}$ inch. The interior of the upper mandible was almost like whalebone. Iris yellow, red on the outside. It had a brackish smell, and weighed $6\frac{1}{2}$ lbs. A male would perhaps, have weighed more. Expanse 5 feet. Expanse of web 5 inches. Wings not reaching quite to the end of tail. Axillaries bright red, in number 12.

123. *EDICNEMUS CREPITANS*, Temm. Thick-knee.

A fine specimen in the Algiers market about the end of February.

124. *VANELLUS CRISTATUS*, Meyer. Lapwing.

Dr. Tristram observed that not even a straggler remained in Algeria after March (Ibis, 1860, p. 79).

125. *CHARADRIUS PLUVIALIS*, Linn. Golden Plover.

Not very common.

126. *CHARADRIUS MORINELLUS* (Linn.). Dotterel.

Common at Ain-Oussera. Some which were shot on the 13th of March, had just begun to assume the summer plumage.

127. *ÆGIALITIS MINOR* (Meyer.) Little Ringed Plover.

The Little Ringed Plover was pretty common at Laghouat, generally alone, or at most in pairs, beside smaller and drier "chotts" than its congener the Kentish Plover frequented. Both species run with great celerity on sand or shingle, stopping about every half dozen yards to bow the head, and emitting a shrill whistle. The eye is dark brown, and the eyelids yellow.

128. *ÆGIALITIS CANTIANA* (Lath.). Kentish Plover.

At Laghouat.

129. *TOTANUS OCHROPUS* (Temm.). Green Sandpiper.

I only shot one in the Tell; but further south they became common, and they might even be said to be numerous at Laghouat. I cannot help thinking that they breed in Algeria. There were at least twenty couple in the Laghouat marsh up to April 9th, and probably much later. There are, indeed, few trees at Laghouat except Date-palms; but there seems no good

reason why they should not sometimes forsake their arboreal habits. Most of them were in pairs; but I admit that is not evidence, as many migratory birds are known to pair "en route." They fly high, with a shrill whistling cry, which is sometimes also emitted on the ground.

130. *TOTANUS GLAREOLA*, Gm. Wood-Sandpiper.

In the same localities as the last; but whether resident or only on passage, I am unable to say. The legs in this species are of a yellowish olive-colour. They remained in flocks up to the time I left for the Mزاب, consorting with the Green Sandpipers. Neither species is shy; but the Wood Sandpiper is the tamer of the two.

131. *TOTANUS HYPOLEUCUS* (Linn.). Common Sandpiper.
At Laghouat and in the Mزاب.

132. *SCOLOPAX RUSTICOLA*, Linn. Woodcock.
In the market at Algiers.

133. *GALLINAGO SCOLOPACINA*, Bp. Snipe.
Common.

134. *GALLINAGO GALLINULA* (Linn.). Jack Snipe.
In the market at Algiers I saw a Jack Snipe*.

135. *CREX PRATENSIS* (Bechst.). Corncrake.
I found one about the end of February in the market at Algiers.

136. *PORZANA MARUETTA*, Leach. Spotted Crake.
At Laghouat; not mentioned by Dr. Tristram or Mr. Salvin.

137. *PORZANA PYGMÆA* (Naum.). Baillon's Crake.
I shot one at Laghouat. My father remarked that it differed from European specimens in having the throat nearly white.

138. *ANAS CLYPEATA*, Linn. Shoveller.
In the market at Algiers.

139. *ANAS CRECCA*, Linn. Teal.
At Bougzoul.

* Dr. Tristram mentions the Stilt (*Himantopus candidus*, Bonn.) as breeding at Laghouat (Ibis, 1860, p. 79); but the Zouaves there, who had a tame one, considered it a great rarity, never having seen such a bird before. Probably since Dr. Tristram's time Stilts have forsaken that place.

140. *ANAS ACUTA*, Linn. Pintail.

Once in the market.

141. *LARUS RIDIBUNDUS*, Linn. Black-headed Gull.

As Black-headed Gulls were very numerous in the harbour of Algiers in February, I was surprised to find that they had all left on my return from the Sahara in the spring. I conclude they had gone to Halloula, or some other lake.

Although modern researches have decided that some birds migrate laterally (*i.e.* from south-east to north-west, or *vice versâ*) the majority of our vernal migrants come to England from due south. Hence Northern Africa is peculiarly interesting to the British ornithologist. North even of the great Atlas chain, countless Willow-Wrens and Blackcaps throng every hedge-row. I think it is no exaggeration to say that I saw enough of these two species to account for the multitudes which annually quit Great Britain; but, with a few such exceptions, our birds of passage go further south than the Atlas. Towards the end of April I began to notice *Philomela luscinia*, *Phylloscopus sibilatrix*, *Anthus arboreus*, *Muscicapa atricapilla*, *Turtur auritus*, restlessly pressing northward. The same birds are migratory in the two countries; and it was interesting to observe how nearly they preserved the same order of precedence *inter se*. The difference in the time of their arrival is in many instances inconsiderable, as will be seen from the following comparative table. It would require a number of observations, extending over a series of years, before we could use such data to get at the speed at which they travel.

	Algeria.		England.	
House Martin . . .	Feb.	17, 1870.	April 18, 1870.	
Swallow	„	19, „	„ 4, „	
Hoopoe	March	13, „	„ 16, „	
Tree-Pipit	„	18, „	„ 4, „	
Sand-Martin . . .	„	22, „	„ 1, „	
Sedge-Warbler* . .	„	24, „	„ 21, „	
Redstart	„	27, „	„ 6, „	
Nightingale . . .	„	31, „	„ 8, „	
Whitethroat . . .	April	1, „	„ 19, „	

	Algeria.		England.	
Turtledove . . .	April	11, „	May	18, „
Wood-Wren . . .	„	23, „	„	18, „
Spotted Flycatcher .	„	24, „	June	15, „
Roller	„	25, „	May	24, „

The above dates for England have been noted in Devonshire, or taken from the 'Field' newspaper by my father, who also informs me that, according to that journal, the Swallow was first observed at Naples on the 28th of March, at Toulouse on the 29th, and at Florence on the 31st.

XXIV.—*Notes on Birds from the Province of São Paulo, Brazil.* By J. F. HAMILTON.

HAVING spent part of the spring of 1869 in the south of Brazil, and made a small collection of birds from that locality, I think that some notes which I took may not prove uninteresting to the readers of 'The Ibis.'

It may be well in the first place to give some idea of the character of the country. From Santos, the port where I landed, a level space of marshy ground, covered by trees, extends for a distance of about eight miles from the sea. At the end of this the mountain-range or Serra do Mar ascends rather steeply to a height of about 2500 feet, which is the elevation of the greater part of the Province of São Paulo. The Serra is covered by a dense forest, which extends for a distance of about twenty miles from the top; beyond this, for at least forty miles, the country is of a very open character, alternating between undulating campos and small patches of forest; further westward it is more mountainous, and the woods which clothe the Serra extend further from the top. About 100 miles west of São Paulo is the town of Itapetininga; the distance between it and the woods of the Serra is about thirty miles, the country being very open and rather hilly. There is a good deal of partially cleared land at the edge of the forest, bordering on the campos, and also some extent of marshy ground; here the greater part of my collection was formed; a few birds were also procured near São Paulo. The birds mentioned in the following notes, with the exception